
SECOND ANNUAL REPORT.

THE
SANITARY CONDITION
OF
THE CITY OF GLOUCESTER,
DURING THE YEAR 1859.

BY
BUCHANAN WASHBOURN, M.D. LOND.,
UNIVERSITY SCHOLAR;
MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON;
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THE SANITARY CONDITION

OF THE

URBAN DISTRICT

OF THE

GLOUCESTER UNION.

1859.

I AM happy, in this my second Annual Report of the sanitary condition of the City of Gloucester, to be enabled to congratulate my fellow citizens on a still further improvement in the health of the population.

The population in 1859 was estimated at 17,209. The registered births were 523—265 males and 258 females, of these 6·11 per cent were illegitimate; in 1858, they were 528—278 males and 250 females. The registered deaths in 1859 were 293—142 males and 151 females—of these deaths, 5·80 per cent. were uncertified. In 1858, 326 deaths were registered. These numbers do not include the deaths or population in the Union Workhouse, Infirmary, and Alms-houses. In 1858 the death-rate of the city-proper, including the mortality in the above-mentioned Institutions was 22·07 per thousand, exclusive of that mortality 19·19 per thousand. Last year the corresponding death-rates were 18·69 and 17·02 per thousand, leaving a balance of 3·38 on the former calculation, and 2·17 on the latter in favor of 1859; taking the latter calculation this balance is equal to a saving of thirty-seven lives. Calculating the mortality of the city last year at the rate arrived at by excluding the mortality in the Hospital, &c. &c. but one death, over what may be called the model death-rate of an urban population, has taken place, a fact which I trust will go far to satisfy the opponents of sanitary progression, that already some good to the community has been obtained. Of course such a low death-rate as the one above-mentioned cannot be attainable every year, for although Diphtheria and other Zymotic diseases were present in our city, yet the total number of deaths was less by thirty-three than in 1858.

Too great a value must not be attached to the low death-rate of a locality. It shews that a certain amount of sanitary precaution has been exerted, but it is no evidence that the condition of the locality cannot be improved. The grand test of the salubrity of a district is the character of the diseases prevalent there; if these diseases be many of them of a Zymotic character, the sanitary condition of the district is far from perfect, and although a smaller number of individuals may, year by year, fall victims to those diseases, that is no proof that all *has* been done that *can* be done; on the contrary, while a certain amount of hope may be derived that, owing to the increased strictness of sanitary inspection, many of the lurking holes of disease may have been

discovered and stopped up, and the fortifications against their inroads multiplied and strengthened, still it must not be forgotten that unceasing vigilance will be required to descry the approach and guard against the attacks of enemies so wily and determined; and the victory gained over them one year must not lap us in a fancied security, that we have obtained an immunity for the future.

The following table shews the distribution of deaths:—

PARISH OR HAMLET.	Males.	Females.	Total.
St. Catherine	10	13	23
St. Mary-de-Lode with Col- lege Precincts	11	8	19
Holy Trinity	6	2	8
St. Nicholas	19	20	39
St. Owen	8	6	14
St. Mary-de-Crypt.....	10	7	17
St. Mary-de-Grace.....	3	1	4
St. John	39	49	88
St. Aldate	5	5	10
St. Michael.....	9	8	17
Barton St. Michael	3	3	6
Barton St. Mary.....	4	10	14
South Hamlet.....	8	12	20
Littleworth.....	7	7	14
Deaths in Infirmary, from City Parishes	2	2	4
Ditto in Alms-houses	2	0	2
Ditto in Work-house.....	17	11	28
Totals	163	164	327

The death-rate in 1859 of the different parishes is as follows—it is compared with the average annual death-rate for the last eight years, and with the birth-rate for 1859.

PARISH OR HAMLET.	Estimated Popula- tion in 1859.	Death- rate in 1859 per 1000.	Birth- rate in 1859 per 1000.	Death- rate on 8 years per 1000.	Above the Average.	Below the Average.
South Hamlet	1944	10·28	22·63	14	..	3·72
St. Michael	1475	11·52	25·76	13	..	1·48
St. Mary-de-Grace	294	13·60	30·61	7	6·60	..
Holy Trinity	570	14·03	21·05	19	..	4·97
St. Aldate	704	14·20	28·40	22	..	7·80
St. Nicholas (including Pool Meadow and B. H.)....	2611	14·09	33·29	23	..	7·30
Barton St. Mary	877	15·96	31·92	15	·96	..
St. Mary-de-Lode (includ- ing College Precincts) }	1156	16·43	28·54	26	..	9·57
Barton St. Michael	350	17·14	34·28	18	..	·86
St. Catherine	1304	17·63	45·24	25	..	7·37
St. Mary-de-Crypt	890	19·10	25·84	16	3·10	..
* St. Owen	643	21·77	32·11	..	..	..
St. John	3924	22·42	23·55	22	·42	..
* Littleworth.....	467	29·97	23·53	..	..	..

* The mortality in the Infirmary having unfortunately been included in the number of deaths occurring in the parish of St. Owen and the hamlet of Littleworth during the seven years forming the period on which the average is taken, obliges me to leave them out of the calculation.

Comparing the death-rates of the several parishes with the average of eight years eight are below, and only four above. The South Hamlet holds the first place as possessing the lowest death-rate in 1859, in 1858 it was sixth—Barton St. Michael, first in 1858 is ninth in 1859. St. Michael retains its position as second, while St. Mary-de-Lode, which in 1858 was lowest, and concerning whose insalubrity special reference was made, has in 1859 succeeded in obtaining the eighth place.

The following table gives the rate of mortality in some of the lanes and streets :—

NAME OF STREET.	Length in yards.	Breadth in yards.	Estimated Population in 1859.	No. of Houses.	Houses connected with main Sewer and having Water-supply.	Deaths from all causes. 1859.	Deaths under 5 years. 1859.	Deaths from Zymotic Diseases.	Deaths from Disease of respiratory Organs.	Death-rate per 1000. 1859.	Death-rate per 1000. 1858.
Alvin Street	334.00	9.37	618	103	23	7	4	1	2	11.32	16.18
Sherborne Street	128.33	10.00	300	50	14	8	4	2	3	26.66	30.00
Columbia Street	132.67	11.08	264	44	22	4	3	2	2	15.15	22.72
Union Street	92.33	10.00	216	36	21	4	1	0	0	18.51	23.14
Worcester Street	441.00	20.24	594	99	12	14	2	1	3	23.56	16.83
Hare Lane	360.33	6.76	450	75	16	5	2	1	2	11.11	13.33
*St. Mary's Square ..	102.00	9.40	315	63	24	5	2	0	0	15.87	34.92
Mitre Street	190.67	5.09	315	63	18	5	2	1	3	15.87	28.57
Oxford Street	158.66	14.90	330	55	21	7	2	2	1	20.52	00.00
Brunswick Square ..	100.47	11.33	130	26	0	7	1	1	3	32.40	00.00
Prince Street	114.33	11.52	185	37	6	7	2	1	3	37.83	00.00
Brother's Place	167.33	10.27	396	66	31	7	4	5	0	17.67	00.00
Cross Key's Lane ..	102.33	4.41	110	22	11	3	1	0	0	27.27	00.00

The following table shews the distribution of births :—

PARISH.	Males.	Females.	Total 1859.	Birth-rate in 1859 per 1000.	Birth-rate 1858.	Birth-rate on an average of 8 years.
St. Catherine	31	28	59	22.63	44.46	43.46
St. Mary-de-Lode with } College Precincts }	12	21	33	25.76 30.61	43.25	36.39
Holy Trinity	7	5	12	21.05	27.02	27.20
St. Nicholas with Pool } Meadow	42	44	86	28.40	29.29	32.21
St. Owen	13	9	22	33.29	33.53	28.28
St. Mary-de-Crypt	12	11	23	31.92	24.65	25.53
St. Mary-de-Grace	4	5	9	28.54	38.33	17.51
St. John	65	61	126	34.00	34.00	36.95
St. Aldate	10	10	20	34.2	28.57	35.63
St. Michael	22	16	38	45.24	27.00	26.40
Barton St. Michael	1	11	12	25.84	26.31	38.37
Barton St. Mary	18	10	28	32.11	28.88	35.60
South Hamlet	20	24	44	23.55	21.37	26.08
Littleworth	8	3	11	23.53	45.45	30.21

* In the centre of the Square is a church and churchyard; the breadth given is that of the thoroughfares between the houses and churchyard railings.

Death-rate per 1000, 1859, whole district.	Birth-rate per 1000, 1859, whole district.	Birth-rate per 1000, 8 years.	Proportion of births to deaths in 1859.
17·02	30·39	31·41	1·78 to 1.

Proportion of births to deaths, 8 years.	Proportion of males to females, 1859.	Proportion of males to females, 8 years.
1·57 to 1.	1·02 to 1.	1·04 to 1.

The illegitimate births were in the South Hamlet, 2 per cent.; in St. Catherine and St. John, 5 per cent.; in Barton St. Mary, 7 per cent.; in Holy Trinity, 9 per cent.; in St. Nicholas, 11 per cent.; in St. Mary-de-Lode, 13 per cent.; and in St. Michael, 15 per cent.

Zymotic Diseases. The deaths from these diseases in 1859 were 62, against 97 occurring in 1858. Only two persons died from small pox; yet it must be confessed that vaccination still continues to offer but little attraction to the poorer classes; and, notwithstanding the facilities afforded, children are allowed to grow up unvaccinated, until small pox rages epidemically, and then it is to be feared the operation is frequently slurred over, they are imperfectly vaccinated, and although armed with a warranty of protection, too often fall victims to the disease, thereby bringing the operation into most undeserved repute. The registrars still complain of their inability to obtain certificates of vaccination, and that their complaint is not unreasonable, the following table will shew :—

Year.	No. of births.	Vaccination certificates.
1854	412	256
1855	438	246
1856	408	204
1857	407	204
1858	420	172
1859	416	57

The preceding Table refers to the District of the South Hamlet, but in the St. Nicholas District the same paucity of certificates obtains; 400 births were registered, and only 23 certificates were received.

I am indebted to my friend, Mr. A. P. CARTER, for the following statement respecting the proportion of vaccinated to unvaccinated children in the National and some parochial Schools.

SCHOOL.	No. of Children.	Vac- cinated.	Un-vac- cinated.	Doubtful.	Per cen- tage of un- vaccinated children.
National	167	150	16	1	10·66
St. Nicholas	165	136	26	3	19·03
Columbia Street	75	57	17	1	29·82
St. Michael	117	90	27	0	30·00

Of the above 524 children, there were 15 who had been attacked with small pox, and subsequent enquiries elicited the fact that not one of them had been vaccinated.

From Diphtheria, 10 deaths occurred, 1 male and 9 females,—3 under five years of age, 1 male and 2 females—6 between five and ten years, all females, and one female aged 43 years. The deaths were distributed among the parishes thus: St. John, St. Mary-de-Crypt, and South Hamlet, in each two deaths; St. Owen, St. Nicholas, St. Mary-de-Lode, and Littleworth, in each 1 death.

MORTALITY FROM ZYMOTIC DISEASES.

PARISH OR HAMLET.	Deaths from all causes at all ages.	Deaths from Zymotic Diseases at all ages.	Deaths from Zymotic Diseases, under 5 years.	Per centage of Zymotic Mortality.	Annual per centage of Deaths at all ages from Zymotic Diseases, on an average of 8 years.
St. Aldate	10	1	1	5	17
St. Mary-de-Crypt.....	17	2	0	11	12
Holy Trinity	8	1	1	12	16
*St. Owen	14	2	1	14	†
Barton St. Mary	14	2	1	14	15
St. Mary-de-Lode (including College Precincts)	19	3	2	15	26
St. Catherine	23	5	3	21	19
St. Michael.....	17	3	1	23	15
St. Nicholas (including Pool Meadow).....	39	9	9	23	23
St. John	88	22	13	25	15
South Hamlet.....	20	7	2	35	14
Littleworth.....	14	5	5	35	..

No death occurred in the parish of St. Mary-de-Grace, and the hamlet of Barton St. Michael.

The following table gives the ages at which deaths have occurred, and their various per centages :—

		1859.	1858.
Under 5 years	122	41.03	42.63
Between 5 and 10	17	5.80	7.36
„ 10 and 15	5	1.70	1.53
„ 15 and 20	11	3.75	2.76
„ 20 and 30	15	5.11	5.21
„ 30 and 40	19	6.48	7.97
„ 40 and 50	22	7.50	5.82
„ 50 and 60	19	6.48	7.36
„ 60 and 70	22	7.50	8.28
„ 70 and 80	32	10.92	13.80
Over 80 years.....	9	3.07	

* The mortality in the Infirmary having unfortunately been included in the number of deaths occurring in the parish of St. Owen and the hamlet of Littleworth during the seven years forming the period on which the average is taken, obliges me to leave them out of the calculation.

† Only 7 deaths occurred in 8 years.

The per centage of the infant mortality in some parishes is shewn as follows, and compared with the annual per centage deduced from an average of eight years :—

PARISH OR HAMLET.	Per centage of Infant Mortality. 1859.	Per centage of Infant Mortality. 1858.	Per centage of Infant Mortality. 8 years.
St. Nicholas	61	44	50
Barton St. Michael	50	25	43
St. Catherine	43	39	38
St. Owen.....	43	70	18
St. Mary-de-Grace	25	60	42
St. Mary-de-Crypt.....	41	43	34
St. Aldate	40	25	50
St. John	39	37	46
St. Mary-de-Lode (including College Precincts).....	36	45	55
St. Michael.....	35	50	47
Littleworth.....	35	60	46
South Hamlet.....	35	29	32
Barton St. Mary.....	35	50	49
Holy Trinity	25	33	47
	38·71	43·57	42·64

The following table shews the average age in years at death in the various parishes for 1859 :—

PARISH OR HAMLET.	Males.	Females.	Both Sexes.	Average Age at death, both Sexes, 1858.
St. Nicholas	15·68	15·90	15·79	22
St. Catherine	18·70	27·92	23·31	26
Barton St. Mary.....	15·75	27·50	21·62	26
Barton St. Michael	21·66	32·00	26·83	36
St. Mary-de-Lode	19·00	39·57	29·28	23
South Hamlet.....	23·75	31·08	27·41	36
St. Michael.....	16·00	42·87	29·43	24
St. Owen.....	35·12	22·66	28·89	17
St. John	28·07	32·85	30·46	32
St. Mary-de-Crypt.....	31·70	34·00	32·85	21
Holy Trinity	32·00	41·50	36·75	22
St. Mary-de-Grace	27·66	*	37·00	18
Littleworth.....	35·00	48·25	41·62	24
College Precincts	48·00	*	49·33	48

* Only one death.

The average age at death in 1859, in the city generally, not reckoning the deaths in the Alms-house, was 32·23 years. In 1858 it was 26·33.

WORKHOUSE HOSPITAL.

374 Persons received medical relief at the Union Hospital from January 1, 1859, to January 1, 1860.

Zymotic Diseases.....	56	Syphilis.....	16
Abscess.....	5	Diseases of the Eyes	13
Ulcers	12	Debility	15
Cancer	2	Lunatic	4
Gout and Rheumatism.....	15	Scalds	3
Strumous Affections.....	26	Diseases of Joints.....	4
Diseases of the Brain, &c. ...	24	Old Age	2
Diseases of the Heart	5	Wounds	1
Diseases of Respiratory Organs	50	Vaccination	4
Diseases of Digestive Organs.	49	Childbirth.....	16
Diseases of Urinary Organs...	6	Tumour.....	1
Uterine Diseases	3	Boils	4
Skin Diseases	30	Hæmorrhage.....	1
Chilblains	6	Sprain	1

The Zymotic Diseases were sub-divided as follows :—

Small Pox	3	Erysipelas.....	3
Scarlet Fever	2	Hooping Cough	1
Measles.....	9	Thrush	1
Fever	5	Diphtheria	1
Diarrhœa	23	Ague.....	2
Rheumatic Fever	6		

The number of deaths in the same period were 46, of whom 26 were males and 20 females. Of the fatal cases nine were over seventy, and eleven were under five years of age.

METEOROLOGY.

“The average temperature of the year was $50^{\circ}8$, which is $2^{\circ}3$ above the average of 88 years, and $1^{\circ}6$ above that of 18 previous years. The first or winter quarter was much milder than usual, being $4^{\circ}9$ above the average of 88 years. The second or spring quarter was also warmer than usual, being $1^{\circ}6$ above the average. The third or summer quarter was also hotter than usual, being $3^{\circ}3$ above the average. The fourth or autumn quarter was a little colder than usual, being half a degree below the average of 88 years, and $1^{\circ}3$ below the average of 18 years. The mean daily range of temperature was $16^{\circ}6$, being $0^{\circ}9$ more than the average of 18 years. The humidity of the air was 80° , being two degrees less than the average. The mean height of the barometer was $29\cdot772$, a small fraction lower than usual. Rain fell to the amount of $25\cdot9$ inches, which was $\frac{6}{100}$ of an inch more than the average.”

The whole of the above items are from the records kept at Greenwich, and borrowed by me from Dr. HILLIER's report of the sanitary condition of St. Pancras.

The meteorology of Gloucester is derived from the observations taken at the County Lunatic Asylum, and kindly furnished to me by my friend Dr. WILLIAMS. The average temperature for the year was $50^{\circ}7$. The mean daily range of temperature was $16^{\circ}3$. The mean height of the barometer was $29\cdot875$. The rain-fall was $23\cdot85$ inches, and it fell on 158 days in the year. The relative proportions of wind were—North, 81 ; East, 63 ; South, 59 ; West, 155.

FOR THE WHOLE DISTRICT.

MONTH.	Barometer.	Thermometer.	Deaths.	Births.
January	30·09	42°0	77	117
February	29·96	43°7	65	85
March	29·87	46°8	77	96
April	29·69	46°4	55	74
May	29·89	54°1	51	68
June	29·84	61°2	31	105
July	30·03	67°5	56	89
August	29·87	63°0	55	89
September	29·77	56°5	56	95
October	29·68	50°5	35	92
November	29·92	42°0	57	88
December	29·84	35°9	57	108
Means	29·87	50°7	56	92·1 6

THE SANITARY CONDITION

OF THE

SUBURBAN DISTRICT

OF THE

GLOUCESTER UNION.

1859.

THROUGH the kindness of Mr. ALFRED PRICE I have been enabled to calculate the population of the suburban district in a mode similar to that employed in the urban division. The population, exclusive of the Hospital and Workhouse, amounted in 1859 to 10,051. The registered births were 320—154 males and 166 females; of these 4·37 per cent. were illegitimate. In 1858 the number of births was 305—153 males and 152 females. The registered deaths were 180—86 males and 94 females, not including the mortality in the Workhouse, &c.—of these deaths 7·22 per cent. were uncertified. In 1858 there occurred 141 deaths—71 males and 70 females. In 1859 the death-rate of the suburban district, including the mortality in the Workhouse, &c., was 19·56 per thousand; excluding that mortality 17·90 per thousand. In 1858 the death-rate on the latter calculation was 15·75, leaving a balance in favour of 1858 of 2·15. In comparing the death-rates of the urban and suburban districts on both calculations, the latter exceeds the former by ·68 and ·88 respectively.

The following table shews the distribution of deaths:—

PARISH OR HAMLET.	Males.	Females.	Both Sexes.
Barton St. Michael	22	24	46
Barton St. Mary	33	37	70
South Hamlet	10	4	14
North Hamlet	2	0	2
Wotton	6	6	12
Kingsholm St. Mary	4	14	18
Kingsholm St. Catherine	9	9	18
Deaths in Infirmary, from Subur- ban Parishes.....	7	2	9
Ditto in Alms-houses	1	1	2
Ditto in Workhouse.....	3	5	8
Totals	97	102	199

The death-rate in 1859 of the different parishes is as follows. It is compared with the death-rate in 1851. The parishes are placed in order of salubrity.

PARISH OR HAMLET.	Estimated Population in 1859.	Death-rate in 1859 per 1000.	Birth-rate in 1859 per 1000.	Death-rate on an average of 8 years	Above the Average.	Below the Average.
Kingsholm St. Mary	1796	10·02	18·53	13·92	..	3·90
Wotton	1158	10·36	32·81	15·44	..	5·08
North Hamlet	160	12·50	18·75	36·23	..	23·73
Barton St. Mary	3855	18·15	37·76	18·10	·05	..
Kingsholm St. Catherine	820	21·70	28·04	12·15	9·55	..
Barton St. Michael	1786	25·71	31·35	19·61	6·10	..
South Hamlet	477	29·35	48·21	30·34	..	·99

In the above table the death-rate of Kingsholm St. Catherine merits special attention. Containing but half the number of inhabitants, it has a death-rate double that of Kingsholm St. Mary, and an increase of 9·55 in the thousand over the average annual death-rate. This last fact clearly proves that some morbid influence has been especially potent during the last year. A very superficial enquiry served to shew what this influence was, namely, a foul open ditch meandering through the district, into which all the *excreta* of the inhabitants are poured, tainting the surrounding atmosphere with noisome exhalations, and by consequence holding out alluring inducements to zymotic diseases to enter, increase, and multiply. Every medical man whose professional avocations call him to the various residences is loud in its condemnation, which is re-echoed by every respectable inhabitant, and it is to be hoped that the guardians will remain no longer deaf to these most reasonable complaints, but will, as speedily as possible, remove so powerful an accessory to disease, and purify the locality from what at present cannot be described otherwise than a most shameful and unnecessary nuisance. As I remarked in my last report, the culverting of the Sweetbriar ditch has resulted in the diminution of the annual mortality from 1 in 25 to 1 in 39. The low death rate of the North Hamlet is evidently an exception to the general rule. When it is remembered that the lower class of houses in the Barbican, and other places in the vicinity of the County Prison, form a part of the district, less surprise will be manifested at the very large average annual death-rate in this hamlet. The drainage is very defective, the air usually breathed by the inhabitants is contaminated by the effluvia of surrounding stables, and the locality generally is sure to be visited by every epidemic visiting the city. These remarks apply with greater force to the houses and inhabitants of the suburban portion of the South Hamlet, inasmuch as up to a recent period their atmosphere was additionally contaminated by the Sudbrook.

The following table shews the distribution of births :—

PARISH OR HAMLET.	Males.	Females.	Total 1859.	Birth-rate 1858.	Birth-rate in 1859 per 1000.	Birth-rate 8 years.
Barton St. Michael	26	30	56	43·32	18·53	44·81
Barton St. Mary	66	78	144	32·54	32·81	44·67
South Hamlet	16	7	23	41·92	18·75	36·53
North Hamlet	3	0	3	35·71	37·76	52·73
Wotton	19	19	38	25·49	28·04	29·63
Kingsholm St. Mary	17	16	33	7·85	31·35	31·52
Kingsholm St. Catherine ...	7	16	23	35·00	48·21	27·38

Death-rate per 1000, 1859, whole district.	Birth-rate per 1000, 1859, whole district.	Birth-rate on 8 years average, whole district.	Proportion of births to deaths in 1859.
17·90	30·77	38·18	1·77 to 1.

Proportion of births to deaths, 8 years.	Proportion of males to females, 1859.	Proportion of males to females, 8 years.
2·10 to 1.	1 to 1·07.	1·02 to 1.

The illegitimate births were in Barton St. Mary, 4 per cent.; in the South Hamlet, 4 per cent.; in Barton St. Michael, 5 per cent.; in Kingsholm St. Mary, 6 per cent.; and in Kingsholm St. Catherine, 8 per cent.

Zymotic Diseases. The deaths from these diseases in 1859 were 46. In 1858 there occurred 57. Five persons died from Small Pox, three of them under five years of age. From Diphtheria 9 deaths occurred, four males and five females; six under five years of age, three males and three females; two at six years, both females; and a male aged nineteen years.

MORTALITY FROM ZYMOTIC DISEASES.

PARISH OR HAMLET.	Deaths from all causes and all ages.	Deaths from Zymotic Diseases at all ages.	Deaths from Zymotic Diseases, under 5 years.	Per centage of Zymotic Mortality.	Annual per centage of Deaths at all ages from Zymotic Diseases, on an average of 8 years.
Kingsholm-St.-Mary.....	18	7	5	38	19
Barton-St.-Michael	46	15	10	32	19
Barton-St.-Mary	70	19	12	27	21
Kingsholm-St.-Catherine.....	18	4	4	22	25
South Hamlet.....	14	1	1	7	23

In the North Hamlet and Wotton no death took place.

The following table gives the ages at which deaths have occurred, and their various per centages:—

			1859.		1858.
Under 5 years	81	.....	45·00	.....	48·93
Between 5 and 10	10	.....	55·5	.....	7·09
„ 10 and 15	4	.....	2·22	.....	0·70
„ 15 and 20	4	.....	2·22	.....	4·96
„ 20 and 30	10	.....	5·55	.....	7·80
„ 30 and 40	10	.....	5·55	.....	7·80
„ 40 and 50	17	.....	9·44	.....	2·12
„ 50 and 60	9	.....	5·00	.....	2·83
„ 60 and 70	13	.....	7·22	.....	6·38
„ 70 and 80	11	.....	6·11	} 12·22	11·34
Over 80 years.....	11	.....	6·11		

From these figures it is seen that as in the urban so also in the suburban districts, a similar increase and diminution obtains in the proportion of the deaths of old and young persons in last year as compared with the year before.

The per centage of the infant mortality in some parishes is shewn as follows, and compared with the annual per centage deduced from an average of eight years :—

PARISH OR HAMLET.	Per centage of Infant Mortality, 1859.	Per centage of Infant Mortality, 1858.	Per centage of Infant Mortality, average 8 years.
Kingsholm St. Catherine.....	61·11	31·02	39·28
Barton St. Mary.....	47·14	49·01	56·11
Kingsholm St. Mary.....	44·44	66·06	54·83
Barton St. Michael	43·47	54·01	51·41
South Hamlet.....	35·71	33·03	41·52
Wotton	33·33	50·00	27·77
	44·20	47·03	45·15

Several facts of the highest importance come to light in the above calculations. In the first place, if further evidence be demanded of the existence of a *materies morbi* in Kingsholm St. Catherine, during last year, it is at once afforded by observing that the mortality among children under five years of age in that hamlet is double that of last year, or upwards of sixty per cent. Out of eighteen deaths eleven occurred to children under the age above mentioned, and of these eight had not completed their first twelve months of existence. Again, for the last eight years in the hamlets of Barton St. Mary and Michael, more than half of those who have annually died have been little children. Surely the complaints that are continually being made, respecting the foul condition of the Sudbrook, are proved by such evidence as this to be well founded. There are houses in these hamlets where the children are born only to die, where the members of a family, one after the other, have been swept away by Diphtheria, Scarlet Fever, and Small Pox, or, surviving these attacks, fall into that condition of imperfect nutrition and gradual wasting which is tersely set forth in the certificates of their deaths as *atrophy* or *marasmus*. For this wanton destruction of life we shall possess the effectual remedy only when the suburbs are placed under similar sanitary regulations to the city. At present the urban population, blessed as it is by a supervision of localities daily increasing in strictness and regularity, is liable to a constant importation of disease from the suburbs, and is prevented from obtaining full benefits of those sanitary enactments for which it has been heavily taxed, by the “cordon” of impurity that surrounds it.

The following table shews the average age at death in the various parishes for 1859 :—

PARISH.	Males.	Females.	Both Sexes 1859.	Both Sexes 1858.
Barton St. Mary	25.45	22.83	24.07	20.0
Kingsholm St. Catherine ..	32.77	17.33	25.05	32.7
Kingsholm St. Mary	28.25	24.18	25.61	14.6
South Hamlet	23.90	33.00	26.50	14.9
Barton St. Michael	23.31	29.83	26.71	27.5
Wotton	47.00	37.83	42.41	24.2

The average age at death in 1859, in the suburbs generally, not reckoning the deaths in alms-houses, &c. was 28·39 years. In 1858 it was 22·4 years.

RURAL DISTRICT.

1859.

IN 1859, 252 children were born—138 males and 114 females ; of these 3·17 per cent. were illegitimate. In 1858, 248 children were born—124 males and 124 females. In 1859, 134 persons died—61 males and 73 females: in the preceding year, 124 died—62 males and 62 females. These numbers do not include the mortality in the workhouse-hospital of paupers or patients admitted from rural parishes ; of these deaths, 23·88 per cent. were uncertified.

I have estimated the population in the rural district in 1859, at 8349, the death-rate on that estimate will accordingly be 16·04 per thousand.

The following table shews the distribution of deaths :—

PARISH.	Males.	Females.	Both Sexes.
Hempstead	4	8	12
Quedgeley.....	6	5	11
Elmore	0	1	1
Whaddon	1	1	2
Tuffley	0	1	1
Matson	0	0	0
Upton St. Leonards	4	6	10
Brockworth	5	4	9
Hucclecote	2	4	6
Barnwood	4	2	6
Churchdown.....	7	9	16
Down Hatherley	1	1	2
Norton	5	1	6
Twigworth.....	2	2	4
Longford St. Mary	3	5	8
Longford St. Catherine	2	3	5
Sandhurst	4	3	7
Ashelworth	8	7	15
Highnam	1	5	6
Lassington.....	0	1	1
Over and Linton	0	0	0
Maisemore.....	2	4	6
Deaths in Infirmary from rural parishes	2	0	2
Deaths in Workhouse	5	5	10
	68	78	146

The death-rate of the different parishes in 1859, compared with the death-rate on an average of 8 years, is as follows :—

PARISH.	Estimated Popula- tion in 1859.	Death- rate in 1859 per 1000.	Death- rate on an average of 8 years per 1000.	Above the Average.	Below the Average.
Elmore	425	2·35	12·99	..	10·64
Tuffley	140	7·14	14·22	..	7·08
Upton St. Leonards	1243	8·04	16·91	..	8·87
Down Hatherley	191	10·47	12·18	..	1·71
Lassington	86	11·62	*	..	..
Maisemore	507	11·83	12·51	..	·68
Norton	503	11·92	15·60	..	3·68
Hucclecote	494	12·14	12·85	..	·71
Sandhurst	532	13·15	17·05	..	3·90
Whaddon	130	15·38	18·00	..	2·62
Barnwood	386	15·54	19·13	..	3·59
Brockworth	459	19·60	20·36	..	·76
Twigworth	200	20·00	11·65	8·35	..
Longford St. Catherine	221	22·62	14·08	8·54	..
Ashleworth	636	23·58	16·31	7·27	..
Longford St. Mary	339	23·59	22·17	1·42	..
Churchdown	631	25·35	18·02	7·33	..
Quedgeley	432	25·46	12·30	3·16	..
Highnam	208	28·84	17·92	10·92	..
Hempstead.....	352	34·09	27·80	6·29	..

* Only 4 deaths in 8 years.

In Matson, Over, and Linton, no death occurred in 1859.

From this table it will be at once perceived that many of the rural parishes have an average annual death-rate as high as and even higher than the most crowded parishes in the urban division; the parishes are mostly situated in the plain between Churchdown Hill and Robin's Wood Hill, and between those hills and what may be called the 'river' parishes or parishes lying on the Severn. It is far from improbable that the land, in some instances, is insufficiently drained, and becomes in the rainy seasons so saturated with water as to permit the formation of numerous pools, the moisture from which must tend to keep the atmosphere in an unduly humid condition; but I have been informed on trustworthy authority, that in many places very little regard is paid to the removal of nuisances, and in some localities, where physically everything conduces to health, such horrible collections of decomposing organic matter exist, that not only do they equal, but absolutely exceed what was exhibited in the worst courts of Deacon Street and the Island a twelvemonth ago. One noteworthy example occurred in the parish of Churchdown where Typhoid fever broke out in a semi-detached house, whose rooms were thoroughly impregnated with the effluvia from pig's wash and night soil, and one or two of its inhabitants died. The disease spread to the next dwelling, thence farther up the village, and was also taken into a neighbouring parish by one of the nurses. The expense incurred for wine, medicine, and nursing, considerably augmented the ordinary parochial relief, and would not have been required if the authorities of the place had insisted on the removal and prevented the occurrence of the nuisances referred to. By the amended "Nuisances Removal Act," the guardians of any parish have powers similar to those of the Inspector of a Local Board of Health, and for the future *they* must be held responsible for every disease generated or fostered by neglect of sanitary precautions.

The rural parishes may be roughly divided into "Hill" parishes, as Tuffley, Upton St. Leonards, Norton, and Churchdown, with an average mortality of 16·18 in the thousand—into "river" parishes as Maisemore, Sandhurst, Ashleworth, Longford-St.-Catherine and Elmore, with an average mortality of 14·58 in the thousand—and into "parishes of the plain," which include all the remaining ones, Hempstead excepted, with an average mortality of 16·28 in the thousand.

I have excepted Hempstead on the same grounds as last year, namely, its approach to a suburban district in containing two rows of contiguous houses, Alma Place and Clarence Town. In my report for 1858, I styled these houses densely populated; subsequent information, however, kindly communicated to me by the Rev. Mr. Lysons, has shewn that I was in error in styling them 'densely' populated. I am told that the number of inhabitants is constantly varying, but I apprehend since the formation of the Wagon Company, the houses have been generally inhabited, and consequently the space occupied bears a closer approximation to suburban than to rural districts.

The following table shews the distribution of births :—

PARISH.	Males.	Females.	Total 1859.	Birth- rate 1859, per 1000.	Birth-rate 8 years.
Elmore	3	6	9	21.31	25·04
Tuffley	1	1	2	14.28	32·37
Upton	18	13	31	24.93	22·44
Hatherley	2	2	4	20.94	28·46
Lassington	0	1	1	11.62	18·07
Maisemore	10	4	14	27.61	34·25
Norton	7	2	9	17.89	29·38
Hucclecote	9	5	14	28.34	22·05
Sandhurst	11	14	25	46.99	38·01
Whaddon	3	3	6	46.15	28·96
Barnwood	9	7	16	41.45	26·53
Brockworth	8	7	15	32.67	34·88
Twigworth	3	0	3	15.00	23·31
Longford St. Catherine	2	1	3	13.57	24·03
Ashleworth	8	3	11	17.29	24·66
Longford St. Mary	7	11	18	53.09	39·75
Churchdown.....	7	14	21	33.28	33·09
Quedgeley.....	15	7	22	50.92	28·24
Highnam	4	2	6	28.84	33·58
Hempstead	11	10	21	59.95	50·66

In Matson, no birth took place, and but one each in Lassington and Over.

Death-rate per 1000, 1859, whole district.	Birth-rate per 1000, 1859, whole district.	Birth-rate per 1000, 8 years.	Proportion of births to deaths in 1859.
16·04	28·77	21·74	1·86 to 1.

Proportion of births to deaths, 8 years.	Proportion of males to females, 1859.	Proportion of males to females, 8 years.
1·84 to 1.	1·21 to 1.	1·05 to 1.

The illegitimate births were 8 per cent. in the parish of Sandhurst, 9 per cent. in Ashleworth and Churchdown, and 12 per cent. in Barnwood. The only birth in Lassington was illegitimate.

The deaths from Zymotic Diseases in 1859, were 24. In 1858 there occurred 17 deaths. Three persons died from Small Pox, eight from Typhoid and Typhus Fever, and one a female of 8 years of age of Diphtheria.

MORTALITY FROM ZYMOTIC DISEASES.

PARISH.	Deaths from all causes at all ages.	Deaths from Zymotic Diseases, all ages.	Per centage of Zymo- tic mortality.	Deaths from Zymotic Diseases, under 5 years.
Hempstead	12	5	41	3
Churchdown	16	5	31	2
Ashleworth	15	4	26	2
Quedgeley	11	2	18	2
Hucclecote	6	2	33	0
Twigworth	4	2	50	0
Longford St. Mary	8	1	12	0
Sandhurst	7	1	14	1
Highnam.....	6	1	16	0
Maisemore	6	1	16	0

In no other parish was there any death from Zymotic Disease in 1859.

The following table gives the ages at which deaths have occurred and their various per centages :—

			1859.		1858.
Under 5 years	40	.....	29·85	.....	32·26
Between 5 and 10	4	.....	2·98	.....	4·03
„ 10 and 15	5	.....	3·73	.....	2·41
„ 15 and 20	2	.....	1·49	.....	5·22
„ 20 and 30	8	.....	5·97	.....	7·25
„ 30 and 40	10	.....	7·46	.....	4·83
„ 40 and 50	5	.....	3·73	.....	6·45
„ 50 and 60	11	.....	8·28	.....	5·64
„ 70 and 80	16	.....	11·94	22·38	20·16
Over 80 years	14	.....	10·44		

The per centage of the infant mortality in some parishes is shewn as follows, and compared with the annual per centage of the last eight years :—

PARISH OR HAMLET.	Per centage of Infant Mortality, 1859.	Per centage of Infant Mortality, 1858.	Per centage of Infant Mortality, 8 years.
Hempstead	58·33	46·15	49·25
Ashleworth	46·66	42·85	32·50
Upton St. Leonards.....	40·00	35·29	33·33
Churchdown.....	37·50	33·33	37·93
Quedgeley.....	36·36	.....	29·26
Hucclecote	33·33	16·66	30·61
Barnwood	33·33	20·00	29·82
Maisemore	33·33	18·18	28·57
Twigworth	25·00	.....	5·55
Norton	16·66	41·66	38·98
Highnam	16·66	25·00	24·13
Sandhurst	14·28	.....	31·42
Longford St. Mary	12·50	37·50	29·31
	31·07	31·66	30·82

The following table shews the average age of death of both sexes in 1859 :—

PARISH.	Males.	Females.	Both sexes 1859.	Both sexes 1858.
Hempstead	36·50	21·62	26·58	24·61
Hucclecote	18·50	35·25	29·66	66·05
Ashleworth	39·62	20·71	30·80	21·28
Barnwood	42·50	10·50	31·83	45·08
Churchdown	30·57	33·33	32·12	35·53
Upton St. Leonards.....	23·00	42·33	34·60	35·17
Quedgeley	24·16	48·20	35·00	.....
Highnam .....	.....	43·20	36·16	48·00
Sandhurst	22·50	58·00	37·71	45·33
Maisemore.....	38·50	39·75	39·33	49·72
Longford St. Mary	55·33	38·00	44·50	25·85
Twigworth.....	15·50	81·00	48·25	.....
Norton	52·00	.....	57·66	30·33
Longford St. Catherine	44·00	71·66	60·60	.....
Brockworth	63·00	59·25	61·33	34·28

The average age of the parishes deduced from the above figures is 40·40.

[TABLE I.]

Shewing the Causes of Death at different Ages during the Year 1859.

CAUSES OF DEATH.		All ages.	Sex.	Total under 1 year.	1	2	3	4	5—	10-	15-	25-	35-	45-	55-	65-	75-	85-	95 and upwards.
Class I.—ORDER I.																			
1	Small Pox.....	10	{	5M	..	1	..	..	1	..	..	1	1	1	..	..	..	..	..
				5F	2	1	1	..	..	..	1	..	..	..	..	..	..	..	..
2	Measles	10	{	7M	1	4	1	..	1	..	..	..	..	..	..	..	..	..	..
				3F	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..
3	Scarlatina	13	{	7M	..	3	3	1	..	..	..	..	..	..	..	..	..	..	..
				6F	..	2	1	2	..	1	..	..	..	..	..	..	..	..	..
4	Hooping Cough ..	1	{	1M	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				0F	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	Croup	6	{	4M	..	..	1	..	1	2	..	..	..	..	..	..	..	..	..
				2F	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..
6	Diphtheria	21	{	5M	..	..	1	1	2	..	..	1	..	..	..	..	..	..	..
				16F	..	1	1	1	2	8	2	..	..	1	..	..	..	..	..
7	Typhus	28	{	14M	2	..	..	..	4	..	2	2	..	1	1	1	1	..	..
				14F	..	1	..	..	..	3	2	4	..	2	2	..	..	..	..
8	Erysipelas.....	2	{	0M	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				2F	2	..
9	Metria	3	{	0M	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				3F	1	2
10	Carbuncle	1	{	0M	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				1F	1
11	Influenza	3	{	2M	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				1F	1	1
12	Diarrhœa	38	{	16M	9	3	1	..	..	..	..	..	..	..	..	3	..	..	..
				22F	18	2	2	..
13	Remittent Fever ..	1	{	1M	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
				0F
14	Rheumatic Fever..	3	{	1M	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
				2F	1	1
ORDER II.																			
1	Syphilis.....	5	{	3M	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				2F	1	1
2	Scurvy	1	{	0M	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				1F	1
Class II.—ORDER I.																			
1	Hæmorrhage	1	{	0M	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
				1F	1
2	Dropsy	8	{	3M	..	..	..	..	..	..	..	..	..	..	1	2	..	..	..
				5F	1	1	3	..
3	Abscess	8	{	4M	1	..	..	..	..	1	..	..	1	..	1	..	..	..	..
				4F	2	1	1
4	Mortification	4	{	3M	1	..	..	..	..	..	..	..	1	..	1	..	..	..	..
				1F	1	..
5	Cancer	12	{	1M	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
				11F	1	..	2	4	3	1
6	Gout	1	{	1M	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
				0F
ORDER II.																			
1	Scrofula.....	6	{	3M	..	..	..	..	..	1	1	..	..	1	..	..	..	..	..
				3F	..	1	2
2	Tabes Mesenterica	5	{	2M	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..
				3F	1	1	1

[TABLE I.—*continued.*]

Shewing the Causes of Death at different Ages during the Year 1859.

[illegible]

[TABLE I.—continued.]

Shewing the Causes of Death at different Ages during the Year 1859.

CAUSES OF DEATH.	All Ages.	Sex.	Total under 1 year.	1	2	3	4	5—	10—	15—	25—	35—	45—	55—	65—	75—	85—	95 and upwards.
2 Suffocation	2 {	1M	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
		1F	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3 Drowning	9 {	8M	..	..	..	..	..	2	..	3	..	..	1	1	1	..	..	..
		1F	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
4 Fracture	3 {	2M	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..
		1F	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
5 Wounds	1 {	1M	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
		0F	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ORDER II.—SUICIDE.																		
1 Cuts and Stabs	1 {	1M	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
		0F	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2 Drowning	1 {	1M	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
		0F	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3 Hanging	1 {	0M	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
		1F	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
ORDER III.																		
1 Other violent cau- ses not specified }	5 {	4M	..	..	..	..	..	1	..	..	..	1	1	1	..	..	..	..
		1F	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
2 Cause not speci- fied or ill-defined }	8 {	6M	1	..	..	..	..	1	..	..	..	1	3	..	..	..	..	..
		2F	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Total	672	328M 344F	155	50	20	13	10	35	20	39	35	55	45	60	65	53	17	1

[TABLE 2.]

*Register of Births and Deaths in the Urban, Suburban, and Rural Divisions of the Gloucester Union,
for the 52 Weeks ending 1st day of January, 1860.*

DIVISION.	Estimated Popula- tion in 1859.	BIRTHS.			DEATHS.			From all causes under 5 years of age.	From Small Pox.	From Measles.	From Scarlet Fever.	From Hooping Cough.	From Diarrhoea.	From Low Fever.	From Diphtheria.
		M.	F.	M. & F.	M.	F.	M. & F.								
Urban	17209	265	258	523	142	151	293	122	2	5	4	1	17	10	10
Suburban	10051	154	166	320	86	94	180	78	5	0	7	0	13	8	9
Rural	8349	138	114	252	61	73	134	40	3	1	2	0	6	8	1
Workhouse	277	7	5	12	26	20	46	11	...	4	...	...	...	3	1
Infirmary and Alms-houses	221	...	...	...	13	6	19	2	...	...	...	...	...	1	...
TOTALS	36107	564	543	1107	328	344	672	253	10	10	13	1	36	30	21

[TABLE 3.]

FIRST OR WINTER QUARTER. 1859.

Register of Births and Deaths in the Three Divisions of the Gloucester Union, for the 13 Weeks ending 2nd day of April, 1859.

DIVISION.	Estimated Popula- tion in 1859.	BIRTHS.			DEATHS FROM ALL DISEASES.			From all causes under 5 years of age.	From Small Pox.	From Measles.	From Scarlet Fever.	From Hooping Cough.	From Diarrhoea.	From Low Fever.	From Diphtheria.
		M.	F.	M.&F.	M.	F.	M.&F.								
Urban ...	17209	58	65	123	36	56	92	41	2	2	4	0	4	1	6
Suburban ...	10051	46	45	91	28	36	64	33	4	0	7	0	1	1	4
Rural ...	8349	44	34	78	17	28	45	13	3	0	2	0	1	1	0
Workhouse ...	277	2	3	5	8	9	17	6	0	2	0	0	0	1	0
Infirmary and Alms-houses ...	221	...	...	...	3	3	6	1	...	...	...	...	...	...	...
TOTALS ...	36107	150	147	297	92	132	224	94	9	4	13	0	6	4	10

[TABLE 4.]

SECOND OR SPRING QUARTER. 1859.

Register of Births and Deaths in the Three Divisions of the Gloucester Union, for the 13 Weeks ending 2nd day of July, 1859.

DIVISION.	Estimated Popula- tion in 1859.	BIRTHS.			DEATHS.			From all causes under 5 years of age.	From Small Pox.	From Measles.	From Scarlet Fever.	From Hooping Cough.	From Diarrhoea.	From Low Fever.	From Diphtheria.
		M.	F.	M.&F.	M.	F.	M.&F.								
Urban ...	17209	55	77	132	31	29	60	24	0	3	0	1	0	2	1
Suburban ...	10051	38	34	72	21	17	38	13	1	0	0	0	1	3	1
Rural ...	8349	26	21	47	14	12	26	10	0	1	0	0	0	1	0
Workhouse ..	277	2	2	4	6	7	13	4	...	1	...	...	...	...	1
Infirmary and Alms-houses ...	221	...	...	...	1	0	1	...	...	...	...	...	...	1	...
TOTALS ...	36107	121	134	255	73	65	138	51	1	5	0	1	1	7	3

[TABLE 5.]
 THIRD OR SUMMER QUARTER. 1859.
Register of Births and Deaths in the Three Divisions of the Gloucester Union, for the 13 Weeks ending 1st day of October, 1859.

DIVISION.	BIRTHS.			Estimated Popula- tion in 1859.	DEATHS.			From all causes under 5 years of age.	From Small Pox.	From Measles.	From Scarlet Fever.	From Hooping Cough.	From Diarrhoea.	From Low Fever.	From Diphtheria.
	M.	F.	M.&F.		M.	F.	M.&F.								
Urban ...	73	58	131	17209	41	30	71	29	...	...	...	...	12	2	1
Suburban ...	32	47	79	10051	23	25	48	23	...	...	...	...	12	1	4
Rural ...	32	27	59	8349	14	19	33	11	...	...	...	...	4	6	...
Workhouse ...	2	0	2	277	5	3	8	1	...	1	...	...	...	...	1
Infirmary and Alms-houses ...	...	...	...	221	5	2	7	...	...	...	...	...	...	...	...
TOTALS ...	139	132	271	36107	88	79	167	64	...	1	...	...	28	9	5

[TABLE 6.]

FOURTH OR AUTUMN QUARTER. 1859.

Register of Births and Deaths in the Three Divisions of the Gloucester Union, for the 13 Weeks ending 1st day of January, 1860.

DIVISION.	Estimated Population in 1859.	BIRTHS.			DEATHS.			From all causes under 5 years of age.	From Small Pox.	From Measles.	From Scarlet Fever.	From Hooping Cough.	From Diarrhoea.	From Low Fever.	From Diphtheria.
		M.	F.	M.&F.	M.	F.	M.&F.								
Urban ...	17209	79	58	137	34	36	70	28	...	...	...	...	1	5	2
Suburban ...	10051	38	40	78	15	15	30	9	...	...	...	...	...	3	...
Rural ...	8349	36	32	68	16	14	30	6	...	...	...	...	...	...	1
Workhouse ...	277	1	0	1	7	1	8	...	...	...	...	...	...	2	...
Infirmary and Alms-houses ...	221	...	...	...	4	1	5	1	...	...	...	...	...	...	...
TOTALS ...	36107	154	130	284	76	67	143	44	...	...	...	...	1	10	3

[TABLE 7.]

Births, Deaths, and Temperature in the Three Divisions of the Gloucester Union during the Four Quarters of 1859.

	Number of Deaths. 1859.	Mean Temp. of Air.	Number of Deaths. 1858.	Mean Temp. of Air.	Number of Births. 1859.	Number of Births. 1858.	Average of 8 years		
							Deaths.	Mean Temp. of Air.	Births.
First Quarter	201	44·1	141	39·4	291	280	181	41·2	282
Second Quarter	124	53·9	109	54·7	251	279	122	54·5	271
Third Quarter	152	62·3	146	60·3	269	259	146	61·5	268
Fourth Quarter	130	42·8	195	44·7	283	263	175	45·2	271
Sum of the 4 Quarters ...	607	50·7	591	49·7	1094	1081	624	50·4	1092

This Table does not include the Births and Deaths in the Union Workhouse, the Infirmary, and Alms-houses.

[TABLE 8.]

Table comparing the Average Age at Death, and the per centages of the Mortality, under 5 and over 70 years of age, in the Three Divisions of Gloucester Union.

DIVISION.					Average Age at Death in Years.	Per Centage of Mortality under 5 Years	Per Centage of Mortality over 70 Years.
Urban ... ..	...	...	...	...	32·23	41·63	13·99
Suburban ... ..	...	...	...	...	28·39	45·00	12·22
Rural ... ..	...	...	...	...	40·40	29·85	22·38

This Table does not include the Births and Deaths in the Union Workhouse, the Infirmary, and Alms-houses.

E. POWER & SON, PRINTERS, WESTGATE STREET, GLOUCESTER.

